Federal Financial Accounting and Auditing

Technical Release 3

Preparing and Auditing Direct Loan and Loan Guarantee Subsidies under the Federal Credit Reform Act

July 31, 1999

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I. INTRODUCTION

The purpose of this technical release is to provide implementation guidance for agencies and auditors to prepare, utilize, report, and audit credit subsidy estimates. Readers of this technical release should first refer to the hierarchy of accounting standards in the current Office of Management and Budget (OMB) Bulletin on "Form and Content of Agency Financial Statements" for guidance. Standards issued by the General Accounting Office (GAO) and OMB have precedence over other authoritative guidance for federal entities. This technical release supplements the relevant accounting and auditing standards, but is not a substitute for and does not take precedence over the standards.

Federal agencies are required to account for direct loans and loan guarantees in accordance with Statement of Federal Financial Accounting Standards No. 2, *Accounting for Direct Loans and Loan Guarantees* (SFFAS No. 2). In developing the financial accounting standards in SFFAS No. 2, the Board recognized "the value of having financial accounting support the budget" and that "accounting standards for credit reform be consistent with budgeting under credit reform." Further, the Board stated that "as more experience is gained, some modifications may be made in budgetary requirements. It is the intention of the Board that so long as the modifications made do not materially affect the basic recognition and measurement principles embodied in the accounting standards, accounting practices for direct loans and loan guarantees should change as needed in order to be consistent with the budget." This technical release provides guidance on acceptable accounting practice in light of current budgetary requirements. In addition, it provides audit guidance.

This technical release includes sections on:

- --Financial Statement Presentation
- --Preparing Direct Loan and Loan Guarantee Subsidy Estimates
- --Audit Tests for Direct Loan and Loan Guarantee Subsidy Estimates

It also presents three appendices on:

- --Acceptable Sources of Documentation for Subsidy Estimates and Reestimates
- --Technical Glossary
- --Summary of Reestimate Requirements

SFFAS No. 2, paragraph 17.

II. BACKGROUND

Since the Credit Reform Act of 1990 was passed, agencies and auditors alike have struggled with the numerous challenges in implementing the various provisions of the act--especially formulating and auditing credit subsidy estimates. This technical release is designed to provide guidance on the preparation and audit of credit subsidy estimates. In addition, a goal of this technical release is to provide implementation guidance that will ensure greater financial statement consistency with the accounting standards set forth in Statement of Federal Financial Accounting Standards (SFFAS) no. 2, Accounting for Direct Loans and Loan Guarantees, and compliance with applicable OMB guidance including Circulars A-11 and A-34 and Bulletin 97-01.

The technical release begins with a discussion of the level at which the credit subsidies are reported. It continues by addressing procedures for preparing estimates and reestimates--including acceptable interim alternatives in the absence of the ideal data store and estimation methods. The technical release also discusses audit methods, both internal control and substantive procedures, that may be used to audit credit subsidy estimates and reestimates. As complex and varied as credit subsidies are within government, auditor judgement is essential to implementing this guidance. Finally, the technical release provides guidance on acceptable sources of documentation for subsidy estimates and reestimates.

Definitions:

Case level - each individual loan or guarantee within a cohort.

Cohort - all direct loans or loan guarantees of a program for which a subsidy appropriation is provided for a given fiscal year, even if disbursements occur in subsequent years. For direct loans and loan guarantees for which a subsidy appropriation is provided for 1 fiscal year, the cohort will be defined by that fiscal year. For direct loans and loan guarantees for which multiyear or no-year appropriations are provided, however, the cohort may be defined by the year of appropriation or the year of obligation.

Fund - an aggregation of programs into a common grouping consistent with how the Congress provides appropriations - i.e., the program and financing accounts together and, if needed, the negative subsidy accounts.

Authoritative guidance for the recognition of many transactions under credit reform is also included in SFFAS no. 7, Accounting for Revenue and Other Financing Sources, Appendix B, "Guidance for the Classification of Transactions," paragraphs 362-365 and 368 - 369.

Financial statements consolidate the activity of the program and financing accounts and, if needed, the negative subsidy accounts. Thus, it may be difficult to establish a direct link between these accounts and the financial statement presentation.

Program - an aggregation of cohorts which are linked by common terms, conditions, regulations, and/or mission goals; often a sub-division of a fund or the budgetary financing account.

Risk category - subdivisions of a cohort of direct loans or loan guarantees into groups of loans that are relatively homogeneous in cost, given the facts known at the time of obligation or commitment. Risk categories will group all loans obligated or committed for a program during the fiscal year that share characteristics predictive of defaults or other costs. All cohort level guidance in this technical release also applies to risk categories when they are used.

Service or line of business - an aggregation of funds into a common grouping: for example, grouping funds into single family or multifamily designations.

The following example is provided to illustrate the relationship the above terms have to each other and show how they may be aggregated for financial statement purposes. Agencies should consult applicable OMB guidance to determine what level of aggregation is most appropriate and acceptable.

Business line or service: Farm Service Agency

Fund: A. CCC Export Guarantees
B. Agricultural Credit Insurance Fund

Program: B1. Farm Ownership Loans
B2. Farm Operating Loans, subsidized
B3. Farm Operating Loans, unsubsidized

Cohort: B3a. FY 1992 Farm Operating Loans, unsubsidized
B3b. FY 1993 Farm Operating Loans, unsubsidized
B3c. FY 1994 Farm Operating Loans, unsubsidized
B3d. FY 1995 Farm Operating Loans, unsubsidized
B3e. FY 1996 Farm Operating Loans, unsubsidized

Risk category: B3e1. FY 1996 Farm Operating Loans, unsubsidized, Southwest Region
B3e2. FY 1996 Farm Operating Loans, unsubsidized, Northeast Region

Case: B3ai Fiscal year 1992 unsubsidized loan to farmer A
B3aii Fiscal year 1992 unsubsidized loan to farmer B

Additional definitions related to credit reform modeling are presented in appendix II.

II. FINANCIAL STATEMENT PRESENTATION

Twenty-four of the largest departments and agencies are required by the Chief Financial Officers Act of 1990 and the Government Management Reform Act of 1994 to prepare and issue audited annual financial statements. The objective of auditing financial statements is to provide assurance that the agency fairly presented, in all material respects, its financial condition and the net cost of operations in the agency's principal financial statements. For some agencies, credit accounts represent an important part of their overall financial picture.

The level of detail at which the audit will take place is driven primarily by the level of detail presented in the financial statements and related footnotes. With regard to credit reform, guidance issued by OMB Bulletin 97-01 and the Treasury Case Studies requires agencies to disclose information concerning credit programs in the footnotes at the fund level or program level, depending on the loan program. This level typically aggregates more detailed information maintained in the agency's system, i.e., the cohort and case level. The following tables summarize the credit related information that should be included in the balance sheet, statement of net cost, and the related footnotes to comply with SFFAS no. 2 and OMB Bulletin 97-01. Although additional financial reporting requirements exist in the other principal financial statements, this technical release will focus only on the preparation and audit requirement for these two financial statements and the footnotes. Finally, additional disclosure requirements exist for direct loans obligated prior to fiscal year 1992 and defaulted guaranteed loans from pre-1992 guarantees.

Non-authoritative illustrations and explanations of requirements for the other principal financial statements are included in FASAB, Implementation Guide to SFFAS no. 7, Accounting for Revenue and Other Financing Sources, chapters 2, 4, and 5.

Principal Statements	Credit Reform Information Presented
Balance Sheet	Credit program receivables and related foreclosed property, net of related subsidy allowance Liabilities for loan guarantees
Statement of Net Costs	Subsidy expense will be included as part of the gross program costs (fees will be included as an offset in calculating subsidy expense rather than recorded as revenue) Interest revenue and interest expense

Footnotes	Credit Reform Information Presented
Direct Loans (and Defaulted Guaranteed Loans) by Program or Fund	By program or fund for direct loans obligated after fiscal year 1991 (and for defaulted guaranteed loans from post-1991 loan guarantees): ● loans receivable gross, ● interest receivable, ● foreclosed property, ● allowance for subsidy cost (present value), and ● net value of assets related to direct loan programs (and loan guarantee programs)
Guaranteed Loans by Program or Fund	By program or fund: ● Present value of post-1991 liabilities for loan guarantees ● Face value of guaranteed loans outstanding, ● Amount of outstanding principal guaranteed
Statement of Net Cost Items By Program or Fund	By program or fund: ● Subsidy expense for current year direct loans or loan guarantees ● Subsidy expense for modifications and reestimates ● Total direct loan or loan guarantee subsidy expense ● Components of current year subsidy expense (interest differential or supplement, defaults, fees, other)* ● Nature of the modification of direct loans or loan guarantees, discount rate used to calculate the modification expense, and basis for recognizing a gain or loss relating to the modification

*A proposal has been developed to revise the financial statement disclosure requirements for credit subsidy component information. This technical release will be revised accordingly once the proposal has been finalized.

III. PREPARING DIRECT LOAN AND LOAN GUARANTEE SUBSIDY ESTIMATES

Preparing accurate and timely direct loan and loan guarantee subsidy estimates must be a joint effort between the budget office and the CFO office at each agency. These offices should work together to ensure that the procedures and internal controls outlined in this section are implemented and operating as designed. However, some agencies may not be able to effectively implement all of these procedures, since they have not yet developed the ideal data stores or methods of estimation necessary. Therefore, until the required information on all cash disbursements and collections related to direct or guaranteed loans can be collected at the case level and summarized, by cohort and program, the acceptable alternatives identified in this technical release will need to be utilized to provide the necessary information for developing subsidy estimates.

Agencies must accumulate sufficient relevant and reliable data on which to base cash flow projections. It is important to note that agencies should prepare all estimates and reestimates based upon the best available data at the time the estimates are made. Guidance on the types of supporting documentation that is acceptable is found in appendix I of this technical release. The auditor typically will not audit these budget estimates until 3 years later. For example, the credit subsidy estimate for fiscal year 1997, which was developed during fiscal years 1995 and 1996, will not be audited until fiscal year 1998. In addition, the auditor should be mindful of changes that may have occurred, which could affect the subsidy rate calculations, when assessing the reasonableness of the estimates. Agencies should have reestimated the credit subsidies, in accordance with OMB Circular A-11 and SFFAS no. 2, to reflect the most recent data available as discussed in the reestimate section of this technical release.

In certain limited instances, informed opinion may be used to support cash flow projections in the absence of historical data. Informed opinion refers to the judgement of agency staff or others who make subsidy estimates based on their programmatic knowledge and/or experience without using a fully satisfactory information store and, in some cases, without using an econometric or other statistical model. Informed opinion may be used only as a last resort when relevant historical data and/or modeling capabilities are not available. This could occur when a new program has been established or when the Congress has changed an existing program in ways that cannot be represented by historical data. Informed opinion should therefore be used as an interim method only, and the agency should develop an action

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Internal controls are a process to provide reasonable assurance regarding the achievement of reliable financial reporting, effective and efficient operations, and compliance with applicable laws and regulations. Internal controls consist of the control environment, control activities, information and communication, risk assessment, and monitoring. See the section on testing internal controls for further information.

plan to establish an information store, appropriate models, and supporting documentation.

Certain conditions must be met before informed opinion will be considered an appropriate source of information. First, the expert's qualifications, such as professional or academic certification or length and kind of experience, must be assessed. Then, the basis of the stated opinion must be articulated in detail. For example, a statistician may be best qualified to determine the appropriate kind of model for estimated cash flows using limited or imperfect data. Most importantly, the expert must explain why that particular projection is appropriate for that particular program.

A. Overall CFO/Budget Procedures and Internal Controls

1. Document the procedures and flow of information used in developing the agency's subsidy estimates at a high level, e.g., flow chart with supporting narrative. These documents should be used to establish consistent procedures for developing the subsidy estimates across funds/programs/cohorts. These documents should also include a discussion of who is responsible for each step of the estimate as well as the review and approval process followed. Documented procedures are necessary to communicate information on the subsidy estimation and reestimation process to employees as well as other interested parties, such as auditors and OMB examiners. Also, when employee turnover is experienced, these documented procedures will provide vital information for new employees on how to complete reliable, well supported estimates of the costs of credit programs.

2. Document the agency's cash flow model(s) used, the rationale for selecting the specific methodologies, and the degree of calibration within the model(s). Also, document the sources of information, the logic flow, and the mechanics of the model(s) including the formulas and other mathematical functions. In addition, document the controls over the model(s) used by the agency in preparing cash flow worksheets. Further, document that the cash flow model(s) reflect the terms of the loan contracts and, in a loan guarantee program, the loan guarantee contracts. Additional details regarding internal controls are discussed in the specific fund/program procedures and controls section of the technical release.

3. For agencies that have not yet implemented the ideal data store or implemented the estimation methods described in the Model Credit Program Methods and

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Calibration is the degree of precision within the model, i.e., the model's ability to accurately predict the cash flows of a given credit program. The degree of calibration within the model can be documented by charts or graphs showing projected cash flows versus the actual cash flows by year and cohort. This document would analyze the variance between projected cash flows and actual cash flows over time.

Documentation for Estimating Subsidy Rates and The Model Information Store (issue paper 96-CR-7), document management's strategic plans towards improving the agency's information store and estimation methods. This strategic plan should include who is responsible for various aspects of the plan and milestone dates for significant plan segments. Finally, it should document the progress at achieving the plan goals.

4. Ensure that general data and assumptions applicable to more than one cohort are used consistently for current year estimates and reestimates. For example, the overall economic conditions should be consistent for all cohorts within a program for a given fiscal year or management should document the reasons for the deviations, e.g., different economic assumptions could appropriately vary for specific geographic regions.

5. Ensure that estimates and all key assumptions used in preparing the budget and financial statements have been coordinated with both the program and accounting offices.

6. Management should assess the impact of changes in laws or regulations on the reliability of estimates and should ensure that the cash flow model reflects these changes. For example, a legislative program change may include provisions about maturity or type of borrowers that are outside the scope of past agency experience or may include program changes that shift the composition of new lending toward more or less risky borrowers.

7. The budget and accounting offices should work together to ensure that cash flow models are updated to reflect the actual cash flows and terms of the loan program recorded in the accounting records. Where material differences exist between the initial budgetary estimate and the actual cash flows, the differences should be investigated and reestimates and/or adjustments to the model should be made as required. Actual obligations, disbursements, recoveries, and receipts should be recorded on a case by case basis. The detail of these transactions should be reflected in the accounting records. However, when this level of detailed information is not available, it may be necessary for the agency to record transactions on another basis. For example, agencies may only receive information in summary from entities that actually make the loans that the Government guarantees. As a result, the agency may need to estimate cash flows based on a detailed analysis of the loan portfolio as a whole and allocate program level cash

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Reestimates and adjustment to the financial statements may not be required in all cases where material differences exist between the initial budgetary estimate and the actual cash flows. For example, if offsetting differences exist in cash flows, such as positive difference in default recoveries and a negative difference in fees, a reestimate may not be necessary.

receipts and disbursements to individual cohorts on an appropriate basis. The basis for this allocation should be clearly documented. Transactions may also be recorded based on estimates derived from representative samples of loans, and/or related transactions, e.g., sampling of loan receipts to allocate cash receipts to cohorts.

8. Interest expense and income should be calculated in accordance with guidance from Treasury/OMB. Discount rates used should be based on the authorized rates from Treasury or OMB.

9. The agency should have an audit trail from individual transactions to the subsidiary ledgers to the general ledger. This will ensure that cash transactions can be identified by type so that they may be identified by subsidy expense component. SFFAS no. 2 currently states: "For the fiscal year during which new direct or guaranteed loans are disbursed, the components of the subsidy expense of those new direct loans and loan guarantees are recognized separately among interest subsidy costs, default costs, fees and other collections, and other subsidy costs." The subgroup has developed a recommendation to revise this disclosure requirement.

10. When a direct loan or loan guarantee is modified as defined by SFFAS no. 2 and OMB Circular A-11, the nature of the modification, the estimated effect on cash flows, and key assumptions should be documented in the same way as the original subsidy estimate. Modifications do not include routine administrative workouts of troubled individual loans or actions that are permitted within the existing contract terms.

11. Ensure that the financial statements consolidate the activity of the program accounts, the financing accounts, and, if needed, the negative subsidy accounts. Negative subsidy accounts are established for programs that have negative subsidies or downward subsidy reestimates (except certain programs classified in the budget as mandatory).

12. Ensure that the cash flow spreadsheets are prepared on a disbursement year (all loans from a given cohort that are disbursed in a given fiscal year) or cohort basis, as appropriate. For example, when all loan disbursements occur during a single fiscal year, the disbursement year includes the entire cohort. When loan programs disburse over more than one year, the disbursement year includes just part of the cohort. For such programs, the cash flows for each disbursement year of a given cohort are necessary to precisely calculate subsidies. However, when agencies are unable to provide this level

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Neither the Federal Credit Reform Act as enacted in 1990 nor its amendments in the Balanced Budget Act of 1997 explicitly states that modifications do not include routine administrative workouts. However, the definition of modification in the 1990 Act was interpreted as excluding routine administrative workouts, and the definition in the 1997 amendments is interpreted in the same way. This interpretation is consistent with paragraph 44 of SFFAS No. 2. Further, the Joint Explanatory Statement of the Committee of Conference on H.R. 2015, the Balanced Budget Act of 1997, states that "workouts are not assumed to be included in the definition of modifications. The conference agreement does not change the treatment of workouts as implemented under the Federal Credit Reform Act of 1990."

of detail, combinations of 2 or more disbursement years may be used as an approximation.

13. Establish security over access to the OMB Credit Subsidy Model to adequately protect it from unauthorized use and corruption. For example, agency management should establish procedures to ensure that the desktop workstations where the OMB Credit Subsidy Model resides are password protected.

B. Specific Fund/Program Procedures and Controls

1. Procedures in place should ensure that cash flow estimates for budgetary and financial statement reporting purposes are based on actual cash flows in previous years to the extent it is appropriate. Agencies should compare budgeted to actual cash flows to ensure that the cash flow models reflect the actual cash flows from the accounting records. Where material differences exist between the initial budgetary estimate and the actual cash flows, the differences should be investigated and reestimates and/or adjustments should be made as required. Changes in key factors and assumptions used as a baseline (e.g., disbursement rates, default rates, recovery rates, time periods, etc.) must be explained, supported, and documented. For example, recoveries have averaged a given percentage for the past 4 years and this recovery rate had been consistently used in preparing cash flow worksheets. However, during the past year, events have occurred which have increased the recovery rate and these events are expected to continue in the future. As a result, the agency may decide to use a recovery rate above the historical average.

2. Sensitivity analysis (or other testing of the agency cash flow models used in developing the subsidy estimates) should be performed to identify which cash flow assumptions have the greatest impact on the credit subsidy rate. To perform sensitivity analysis, management must first identify the root of each cash flow assumption to ensure that all subsequently related formulas and assumptions are adjusted appropriately. Generally, each root assumption should be individually adjusted by a fixed proportion (e.g., plus and minus 10%), and the revised cash flows run through the OMB Credit Subsidy

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Reestimates may not be required in all cases where material differences exist between the initial budgetary estimates of cash flows components and the actual cash flows of these components. For example, if offsetting differences exist in cash flows such as positive differences in default recoveries and a negative difference in fees, a reestimate may not be necessary.

The root of the cash flow assumption is the starting point for the assumption, i.e., there are no preceding formulas or related inputs that would affect the assumption.

Model to determine the assumption's effect on the subsidy rate. Timing assumptions for defaults, recoveries, prepayments, etc. should also be adjusted by a fixed amount (e.g., plus and minus 1 year). The recovery assumption should be adjusted along with the timing of recovery assumption to ensure that a realistic relationship between these two assumptions continues to exist, i.e., to test the sensitivity of recoveries, the default timing assumption must also be adjusted to ensure that the recovery occurs after the default. Those assumptions that caused the largest change in the subsidy rate are determined to be the key cash flow assumptions.

3. Key assumptions, identified by the sensitivity analysis that is utilized in the process of developing estimates, should be documented including the rationale, justification, and source of supporting documentation.

4. The accounting office should maintain detailed subsidiary accounting records by program, cohort, and case.

5. The cash flow estimation process, including all underlying assumptions, should be reviewed and approved at the appropriate level including revisions and updates to the original model. Cash flow models should be tested for reliability as part of the approval process by comparing estimated cash flows to actual cash flows and assessing the model's ability to replicate a credit program's performance. Additional information on how the auditor will test the model can be found in the control activities and testing sampled cohorts sections of this technical release.

6. The agency should do trend analysis of the credit subsidy expense components, i.e., interest, defaults, fees, and other. When unusual fluctuations are identified, they should be investigated and explained.

7. The agency must document the options used in the OMB Credit Subsidy Model and the reasons those options were selected.

GAO contracted with an independent public accounting firm to review the OMB Credit Subsidy Model's compliance with the Credit Reform Act and SFFAS no. 2, the reliability of the model's calculations, and the extent of internal controls over the model. GAO's report Credit Reform: Review of OMB's Credit Subsidy Model (GAO/AIMD-97-145, August 29, 1997) provides guidance to agencies and auditors, which has been incorporated into this

8. The agency should determine whether the proper scale for the cash flow spreadsheets was used. Some program subsidy rates, particularly those for programs disbursing over several years, may be influenced slightly with the scale of the program. Therefore, management should determine whether rounding to three decimal places has no significant effect on the cash flow spreadsheet values and the subsidy rate.

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technical release in summary form, on the types of controls that should be established when using the model.

9. The agency should determine whether the OMB Credit Subsidy Model options selected properly reflect specific characteristics of the applicable credit program. For example, the OMB Credit Subsidy Model option for the timing of principal and interest payments for direct loan program and the percent of loan guaranteed should agree with the program's credit terms.

10. The agency should review the OMB Credit Subsidy Model output to determine whether any warning messages are listed and determine why the situation causing the warning message was not resolved and whether not eliminating the error could have any impact on the subsidy rate calculation. Also, if applicable, the agency should determine whether the suppression of any error messages was appropriate by checking the agency's cash flow spreadsheet to determine whether the "suppress warnings" command was used and assess the impact these suppressed error messages could have on the cash flows.

C. Reestimates

OMB Circular A-11 has established criteria for when agencies should calculate credit subsidy reestimates for the budget. It states that "interest rate reestimates of the subsidy cost of a cohort of direct loans or loan guarantees must be made when a cohort is substantially disbursed (i.e., when 90 percent of the direct loans or guaranteed loans have been disbursed.) The computation should be made at the beginning of the fiscal year after this criterion is met unless a later time within that same fiscal year is approved by the OMB representative with primary budget responsibility for the credit account"; and that "technical/default reestimates of the subsidy cost of a cohort of direct loans or loan guarantees must be made at the beginning of every year as long as the loans are outstanding, unless a different plan is approved by the OMB representative with primary budget responsibility for the credit account. The different plan might be with regard to the time when reestimates are made within the year or the frequency of reestimates." If the plan allows technical/default reestimates to be made less often than every year, it should require technical/default reestimates in any year when any one of four conditions is met.

SFFAS no. 2 states that "the subsidy cost allowance for direct loans and the liability for loan guarantees are reestimated each year as of the date of the financial statements. Since the allowance or the liability represents the present value of the net cash outflows of the underlying direct loans or loan guarantees, the reestimation takes into account all factors that may have affected the estimate of each component of the cash flows, including prepayments, defaults, delinquencies and recoveries. Any increase or decrease in the subsidy cost allowance

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These four conditions are: (1) based on periodic schedules established in coordination with OMB, (2) when a major change in actual versus projected activity is detected, (3) when a material difference is detected through monitoring "triggers" developed in coordination with OMB, and (4) when a cohort is being closed out.

or the loan guarantee liability resulting from the reestimates is recognized as a subsidy expense (or a reduction in subsidy expense). Reporting the subsidy cost allowance of direct loans (or the liability of loan guarantees) and reestimates by component is not required." Appendix III summarizes the reestimate requirements that are described below.

1. An interest rate reestimate of the subsidy cost of a cohort of direct loans or loan guarantees is made for the difference between the estimated interest rate at the time of obligation and the actual annual interest rates prevailing during the years of disbursement. An interest rate reestimate should be made whenever the change in the interest rate materially affects the financial statements or, if no material change occurs prior to the cohort being 90% disbursed, at least one time when the cohort is 90% disbursed. Therefore, when an interest rate change has occurred that would materially affect the financial statements, agencies should calculate the interest rate reestimate and include the reestimate in the current year's financial statements.

2. A technical/default reestimate of the subsidy cost of a cohort of direct loans or loan guarantees is made for all changes in assumptions other than discount rates. If OMB has approved a plan that permits an agency to make technical/default reestimates less often than annually, the agency should monitor the indicators specified in that plan to determine whether a reestimates is needed for other reasons: in particular, because it is needed to comply with other parts of that plan and/or because the reestimate has a material financial statement impact.

3. An agency that does not plan to perform technical/default reestimates annually must establish a systematic process to determine whether a reestimate is necessary and, if material to the financial statements as a whole, the reestimate must be reflected in the current year's financial statements. <u>If an acceptable monitoring process is not in place, reestimates must be made annually for the financial statements.</u> An acceptable process would generally include the following:

   (a) *A comparison between actual experience to date and the assumptions that had been previously used for the period to date.* -- An acceptable process would

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If the interest rate assumption is a key assumption, agencies should consider using sensitivity analysis, as discussed on page 13, to determine whether the change in interest would have a material affect on the financial statements. To do this, agencies would need to repeatedly adjust the interest rate by predetermined increments, e.g., plus or minus 100 basis points, and re-run the revised cash flows through the OMB Credit Subsidy Model to determine the impact on the subsidy rate. Agencies should then multiply the revised subsidy rate by the assumed disbursement amount, to calculate financial statement impact. As a result, agencies will be able to document the amount of interest rate change that would be necessary, under an assumed disbursement amount, to materially affect the financial statements.

regularly (but not less than annually) compare the actual cash flows, by subsidy component, reported by the accounting office at the program level to those used in the previous budget estimates.

(b) *Differences between the current best estimate of future cash flows and the assumptions that had been previously used.* -- An acceptable process would also include procedures that identify and systematically monitor significant economic and other assumptions underlying cash flows in order to determine whether changes have occurred in the expected future cash flows that make a reestimate necessary. The significant assumptions would be expected to differ from program to program according to each program's own attributes. Economic changes could include, for example, recessions, changes in interest rates, changes in the market value of collateral, or international economic factors (such as trade disruptions). Other changes could include, for example, legislative or administrative program changes (of the kind that do not meet the OMB Circular A-11 definition of a modification), operational changes (such as reduction in staff because of budgetary constraints that would affect loan servicing), environmental changes, or war. The impact of these changes on the estimates of future cash flows (and, if necessary, the cash flow models) must be assessed and documented.

(c) *Special emphasis for programs that have peak periods* - Where applicable, an acceptable monitoring process should provide extra emphasis during periods when cohorts are experiencing significant increases or decreases in defaults, prepayments, recoveries, or other cash flows. For example, suppose for one particular program historical experience has demonstrated that a cohort usually experiences increased defaults starting in year 3 which peak in years 6 -8. Historical experience has further demonstrated that defaults decline steadily beginning in year 9, until a stabilized rate is reached in years 13 through 30. During years 3 - 13, the agency's monitoring efforts should compare actual cash flows for defaults reported by the accounting department to estimated default cash flows as a way of validating the default cash flow assumption and determining whether a reestimate or adjustment to the overall rate or timing is

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OMB has begun to develop a new method of computing reestimates based on the "balances approach," which compares (a) the net present value of the best current estimate of the remaining cash flows with (b) the net balance owed to Treasury (for direct loan programs) or the net balance on deposit with Treasury (for loan guarantee programs). In estimating the net present value of the remaining cash flows, agencies would still need to estimate future cash flows based on actual experience with cash flows to date and forecasts of other factors. They would therefore still need to maintain historical cash flow data, at the subsidy component level, to analyze the sources of error in the estimates of cash flows for past periods.

necessary. However, once the monitoring system has demonstrated that the cohort has stabilized and no significant unusual events have occurred, it is less likely that annual reestimates would be necessary.

4. In years for which reestimates are made, they should normally be made as of September 30 of the reporting period using a data base that is complete through the same date. If OMB has approved a plan to make reestimates at another time during the year, this will be acceptable for financial statement purposes if the following conditions are met:

   (a) The technical/default reestimate of the subsidy cost is made for a 12-month period ending not earlier than June 30, using a data base with actual transactions through June 30 of the reporting year. The reestimated subsidy cost is compared with the previous estimate of the subsidy cost for the year ended September 30. The difference is the amount of the reestimate. Alternatively, for the last quarter of the fiscal year, agencies may estimate that quarter's cash flows on a reasonable basis e.g., the last quarter's cash flows from the previous fiscal year, or if the cash flows are relatively uniform, one quarter of the originally estimated cash flows, or the average cash flows of the previous three quarters. For cohorts with an interest rate reestimate, the interest rate reestimate would be calculated after September 30 using actual interest rates.

   (b) In order to use this approach, agencies must ensure that the monitoring process described previously includes monitoring major events occurring during the fourth quarter that could have a significan timpact on the subsidy reestimate. If such an event is identified, a reestimate of the affected cohorts may be necessary.

   (c) Agencies may be unable to calculate, and reflect in the financial statements, a reestimate for major events occurring during the fourth quarter because, at this point, the effects of the major event may not yet be determinable. In this case, agencies must disclose such events in the footnotes as a potential material uncertainty. The disclosure will further acknowledge that this/these event(s) will be taken into consideration in making the reestimate for the following year or once the impact of the events is determinable.

   (d) This policy, when adopted by an agency, with OMB's approval, will be disclosed in the footnotes to the agency's financial statements.

5. If the most recent estimated cash flows of a cohort are different from the actual experience, these differences and the reasons for these differences may affect the future estimated cash flows of that cohort. The effects on the future cash flows of that cohort need to be assessed and included in the reestimate, and the reasons for the estimated effects need

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[14]See footnote 10 for a discussion of the "balances approach" for calculating reestimates.

to be documented.

6. Reestimates for any of the reasons in this section should be completed, submitted to OMB, and included in the current year's financial statements, on a timely basis. If OMB has approved a plan that permits an agency to make technical/default reestimates less often than annually, written documentation of the plan and OMB's approval should be obtained. If a technical/default reestimate is not made in a particular year, documentation should explain why that is consistent with the approved plan and provide assurance (in the ways specified above) that the lack of a technical/default reestimate would not have a material financial statement impact.

7. Reestimates submitted by the budget office and approved by OMB should be recorded in the accounting records.

8. If the cause of the reestimate affects the cash flows of future cohorts, the assumptions used to produce cash flow estimates and/or the method of estimating cash flows should be revised appropriately for the budget estimates of future cohorts.

IV. AUDIT TESTS FOR DIRECT LOAN AND LOAN GUARANTEE SUBSIDY ESTIMATES

The overall purpose of auditing the subsidy estimation and reestimation process is to provide reasonable assurance that the reported credit program receivables and related foreclosed property and related allowance for subsidy, liabilities for loan guarantees, and subsidy expense, are reasonably stated in the financial statements and provide reliable and useful information for decision makers. Since the audit should be conducted in three phases--planning, internal control, and substantive testing--this section of the technical release is organized in the same way. Due to the complexity of credit subsidy estimates, thorough planning is key to an effective and efficient audit. The auditor must also assess the agency's internal controls and the risk of errors and irregularities that may cause a material misstatement in the financial statements. Based on this assessment, the auditor can determine the nature, timing, and extent of substantive testing to determine whether the

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[15] OMB's four process, outlined in OMB Circular A-11, allows for calculating budgetary technical/default reestimates at times other than the beginning of each fiscal year following the year in which the initial disbursement was made, as long as the loans are outstanding (subject to OMB approval) However, this does not allow agencies to omit material reestimates from the current year financial statements or to postpone including material technical/default reestimates in the financial statements until a subsequent year. Conversely, the OMB process may require agencies to make technical/default reestimates for the budget that are not material to the financial statements.

credit subsidy estimate is reasonable in the context of the financial statements taken as a whole.

A. Planning the Credit Subsidy Audit

The audit of credit subsidy estimates should be considered in conjunction with other audit areas, e.g., claims, insurance in force, foreclosed property, premium receipts, and loan sales. In this way, the auditor will be able to leverage off the other audit areas to maximize audit efficiency and effectiveness. During the planning phase, the auditor should focus on four primary objectives (1) understanding the agency's credit subsidy estimate process, (2) identifying key estimate assumptions, (3) identifying material and high risk credit programs, (4) assessing inherent risk and the effects of EDP on inherent risk.

1. Understanding the Credit Subsidy Estimate Process

Without a thorough understanding of the agency's credit subsidy estimate process, the auditor is unable to efficiently and effectively audit the loans receivable and the related allowance, the liability for loan guarantees, and the subsidy expense, in accordance with applicable auditing standards. To gain an understanding of the credit subsidy process, the auditor should

1. Review the documented subsidy estimation procedures to gain an understanding of the process, including the types of underlying data used to develop cash flow assumptions, key formulas used in cash flow worksheets, and the person responsible for each phase of the process.

2. Identify significant external and internal factors that may affect the credit subsidy process. External factors may include economic conditions, current political climate, and relevant legislation. Internal factors may include the size of the agency's budget and accounting staff, qualifications of key personnel, turnover of key personnel, and systems capabilities.

3. Develop a high-level understanding of the agency's use of electronic data processing (EDP), how EDP affects the subsidy estimate process, and which systems should be included with the EDP general and application control review.

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[16]The auditor should actively coordinate EDP general and application control reviews to ensure that they focus on controls over key cash flow reports such as defaults or prepayments as well as the controls over the cash flow spreadsheets. Further, the auditor should consider evaluating EDP controls over the agency's use of the OMB credit subsidy model. For a detailed discussion of the audit procedures related to the OMB credit subsidy model, refer to GAO's report Credit Reform: Review of OMB's Credit Subsidy Model (GAO/AIMD-97-145, August 29, 1997). These audit procedures have been included in this technical release in summary form.

4. Determine, with the assistance of an EDP audit specialist as necessary, whether EDP-related controls are likely to be effective. If controls are not likely to be effective, the auditor should determine the impact on control risk, appropriately adjust substantive testing, and focus on testing the effectiveness of manual controls during the internal control phase of the audit.

The auditor may gather planning information through different methods such as observing agency operations, interviewing agency staff, reviewing procedures manuals, and conducting walk-throughs. In addition, the auditor may gather information from relevant reports, including prior year financial statements, Federal Managers' Financial Integrity Act (FMFIA) reports and supporting documentation, Inspector General and internal audit reports, and congressional hearings and reports.

2. Identifying Key Estimate Assumptions

One way for the auditor to maximize audit efficiency is to focus on the key assumptions, i.e., those assumptions that have the greatest impact on the credit subsidy rate and hence, the credit subsidy amount. To identify key assumptions, the auditor should evaluate and retest selected areas of management's credit subsidy sensitivity analysis. For example, in performing this analysis, agency management may have varied the subsidy estimate assumptions by a fixed amount, such as 10 percent in either direction, and was thus able to identify which assumptions were more sensitive to fluctuations. Assumptions that are sensitive to fluctuations require agency management to be more precise. These assumptions often require greater audit effort because minor variations may have material effects on the subsidy amount. The auditor should review this sensitivity analysis carefully and retest selected portions as necessary to gain comfort with management's work before relying on it. In retesting the agency's sensitivity analysis, the auditor should consider recalculating the impact that changes in key assumptions have on a credit program's subsidy amounts.

When identifying key assumptions, additional consideration should also be given to those assumptions that fluctuate significantly. These assumptions may be more difficult to predict, and their normal fluctuation may materially affect the credit subsidy amount even though the credit subsidy amount may not change significantly during the sensitivity analysis. For example, prepayments may be difficult to predict since historically they fluctuated 10 percent or more over the past 5 years. Thus, even though the auditor did not identify prepayments as

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[17]Although the actual testing of technical EDP-related controls should generally be performed by an EDP audit specialist, the financial statement audit team should participate in identifying
and testing general controls, user controls, and application controls to tentatively conclude on the effectiveness of EDP-related controls.

a key assumption during the review of the agency's sensitivity analysis, prepayments should be considered a key assumption because their normal fluctuation may materially affect the credit subsidy amount.

If management has not performed sensitivity analysis of the credit subsidy assumptions, the auditor may consider performing a sensitivity analysis or other analysis to identify the key cash flow assumptions. This analysis will allow the auditor to focus on key areas and will increase the auditor's efficiency in the substantive testing phase of the audit.

3. Identifying Material and High Risk Credit Programs for Internal Control and Substantive Testing

In order for the auditor to maximize efficiency and effectiveness when selecting programs for internal control testing and substantive testing, the auditor should focus efforts on material programs. Generally, material programs have higher inherent risk than immaterial programs. Materiality is defined in Financial Accounting Standards Board Statement of Financial Concepts no. 2, Qualitative Characteristics of Accounting Information, as "the magnitude of an omission or misstatement of accounting information that, in the light of surrounding circumstances, makes it probable that the judgement of a reasonable person relying on the information would have been changed or influenced by the omission or misstatement." Thus, items of little importance are less likely to affect the financial statement users judgement. Materiality has both qualitative and quantitative factors, since certain types of relatively immaterial misstatements from a quantitative standpoint could be significant for other reasons. For example, some programs that are immaterial in amount could be sensitive because of Congressional interest.

According to Statement on Auditing Standard 47, AU Section 312, Audit Risk and Materiality in Conducting an Audit, "audit risk and materiality, among other matters, need to be considered together in determining the nature, timing, and extent of auditing procedures and in evaluating the results of those procedures." The following list includes some of the factors that the auditor should consider in determining which direct loan or guarantee programs are material and/or high risk and therefore should be selected for testing.

- the amount of subsidy expense for a given program,
- the dollar value of the program's loans on the balance sheet,
- the dollar value of the program's loan guarantees and their related liability for default,
- the dollar amount of subsidy expense, magnitude of transactions, and variance of past reestimates,
- past audit experience for the program,
- the auditor's preliminary assessment of risk,

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[18] Government Auditing Standards 1994 Revision, p. 34.

- recent significant changes in economic conditions,
- the complexity of the program (the number, size, and technical difficulty of the loans),
- the age of the program (new programs may have more risk than older established programs, other things being equal),
- the degree to which subrecipients, contractors, and private lenders make decisions about implementing the program, and
- Congressional and other public policy interest in a given program.

This list is designed to assist the auditor in identifying material and/or high risk programs. The above list is not designed to replace professional judgement. For example, a credit program could have a relatively small subsidy expense because the agency nets gross subsidy expense components with offsetting fees, in accordance with SFFAS no. 2 and the Credit Reform Act. However, the auditor should not focus solely on the net subsidy expense. Rather, the auditor should consider the gross amounts of the subsidy expense and fees, the total loans receivable, and/or the total liability for loan guarantee account when determining whether the program is material.

Past audit experience should be considered since it may indicate that the program should be retested again this year when, for example, significant internal control weaknesses were discovered in the prior year's audit. Conversely, past audit experience may allow the auditor to reduce the level of current year testing for the program. Factors that should be considered in determining the appropriate level of detailed substantive testing for material programs include:

- the number of years since the last time the program was included in internal control and substantive testing,
- the results of the preliminary assessment of risk,
- changes in economic events that affect the current cash flow assumptions,
- the level of employee turnover, and
- changes in program characteristics, terms of credit, or implementation.

Finally, when inherent risk is low and the agency's control environment is strong, the auditor may consider testing credit programs on a rotating basis. In determining whether rotational testing is appropriate, the auditor should consider (1) the results of prior audit experience, (2) the length of time since the program was tested, (3) the materiality of the program, and (4) the auditor's assessment of inherent and control risk.

Upon completion of the internal control testing, the auditor may wish to revise the assessment of which programs are material and/or high risk. For example, the auditor's preliminary risk assessment may not be supported by the results of the internal control testing. When the results of the internal control testing lead the auditor to conclude that the internal controls are not operating effectively, the auditor may revise the risk assessment for programs originally expected to have low risk. As a result, the auditor should include these programs in the detailed substantive testing. On the other hand, the auditor may decide to reduce the extent of detailed substantive testing for a material program based on the results of internal control testing.

4. Assessing Inherent Risk and the Effects of EDP

Based on the auditor's understanding of the credit estimation process, the auditor identifies specific inherent risks and control environment weaknesses. To identify inherent risk factors, the auditor generally focuses on (1) the nature of the agency's program, (2) prior history of audit adjustments, and (3) the nature of material transactions. The nature of an agency's program may increase inherent risk. For example, some loan guarantee programs may be more susceptible to errors because of loans issued and serviced by third parties. Significant audit adjustments in previous audits often identify problem areas that may continue to result in financial statement misstatements. Accounts involving subjective management judgements, such as credit subsidy estimates and the liability for loan guarantees, are usually higher risk than those involving objective determinations.

EDP can also introduce inherent risk factors. The auditor should assess EDP-related factors and determine the overall impact of EDP on inherent risk. For example, unusual or nonroutine transactions generally increase inherent risk. EDP programs or systems developed to estimate credit subsidy amounts, e.g., the agency's cash flow spreadsheets, may not be subjected to the same procedures and controls as EDP programs and systems developed to process routine transactions. The degree of existence and completeness of the audit trail may also increase inherent risk. The audit trail demonstrates how a specific transaction was initiated and processed. Some EDP financial management systems are designed so that the audit trail exists only for a short period, only in electronic format, or only in summary form. Uniform processing of transactions may also increase inherent risk because a programming error will consistently misstate transactions. For example, if an agency misstates a cash flow assumption, such as defaults, recoveries, or the interest rate, in a cash flow spreadsheet that has been electronically linked to other cash flow spreadsheets, the error will affect all of the linked cohorts or programs. As a result, the auditor must be aware that some errors may be systemic rather than isolated incidents and the auditor should be careful to distinguish between the two.

B. Testing Internal Controls

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[19]Inherent risk is the susceptibility of a financial statement assertion to a material misstatement, assuming that there are no related internal controls. Financial statement assertions are representations by management that are embodied in financial statement components. See Codification of Statements on Auditing Standards, AU Section 326.

As noted above, the auditor should select material programs for internal control and detailed substantive testing. In this way, the auditor will more effectively and efficiently focus audit efforts on the programs that are most significant to the users of the financial statements. In some instances, more than one program will utilize the same system of internal controls. Thus, the auditor would need only test the system once to gain assurance on all related programs. This section provides guidance for the auditor to use in evaluating the agency's internal controls for material and/or high risk credit programs so that the auditor can determine the nature, timing, and extent of substantive tests to perform on credit reform related accounts such as subsidy expense, allowance for subsidy, and liabilities for loan guarantees. The auditor needs to evaluate the agency's internal controls before updating the preliminary assessment of the control risk.

Due to the complexity of credit reform, it is necessary for the auditor to obtain a good understanding of the internal control components to design effective substantive tests. If, after evaluating the agency's internal controls, the auditor assesses control risk at a high level, the auditor will need to obtain most, if not all, of the audit assurance from substantive tests. Thus, the auditor will need to expand the level of detailed substantive testing. However, if the auditor determines that control risk is low based on the evaluation of the agency's internal controls, the auditor has more assurance concerning the accuracy of the information generated within that structure. Thus, the auditor may be able to reduce the level of detailed substantive testing.

Internal controls are a process--effected by an agency's management and other personnel--to provide reasonable assurance regarding the achievement of reliable financial reporting, effective and efficient operations, and compliance with applicable laws and regulations. Internal controls consist of the control environment, control activities, information and communication, risk assessment, and monitoring. The auditor should consider the following when obtaining an understanding of the agency's internal controls.

1. <u>Assessing the Control Environment</u>

The control environment sets the tone of an organization, influencing the control

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[20]Control risk is the risk that a material misstatement could occur in a financial statement assertion and will not be prevented, detected, and corrected on a timely basis by the entity's internal control structure.

[21]In this technical release, the term "agency management" is used in the same context as it is used in OMB Circular A-123 and may include any individual Federal manager responsible for ensuring that credit reform is implemented efficiently and effectively to achieve intended program results. Agency management could include, but is not limited to, the Chief Financial Officer, Director of Budget, and Controller.

consciousness of its people. It is the foundation for all other components of internal control, providing the discipline and structure. When assessing the control environment, the auditor should consider management's philosophy and operating style (done elsewhere in the audit) and generally perform the following steps for the material programs' systems of internal controls.

1. Determine whether the same estimation process was used for other programs by comparing the documented procedures between programs. If the same process was used between programs, the results of the internal control testing for this program may help the auditor gain comfort with other programs.
2. Determine how management assures itself that established procedures and internal controls have been consistently implemented among the various divisions/branches responsible for preparing subsidy expense estimates.

3. Determine how management assures itself that the historical data used as the basis for the subsidy amounts accurately supports the cash flow assumptions.

4. Determine whether the agency has the appropriate supporting documentation for key assumptions as outlined in appendix I of this technical release.

5. Determine how management assures itself that assumptions or data requirements which are based on conditions affecting multiple programs and cohorts are uniformly applied. For example, identify and test the controls in place that management relies on to ensure that:

    - interest rates used when discounting cash flows are based on approved rates established by Treasury or OMB,
    - similar assumptions are made concerning economic conditions for a particular business sector where both direct and guaranteed credit programs are delivered,
    - historical data for subsidy expense components are consistently collected and interpreted among similar programs, and
    - options chosen for the OMB Credit Subsidy Model properly reflect the specific characteristics of the applicable credit program.

6. Review management's comparison of projected cash flows to actual cash flows from the accounting department. Determine whether management (1) appropriately identified material variances and the cause of these variances, (2) performed trend analysis of the credit subsidy components, (3) adjusted future cash flow estimates of those cohorts to reflect these variances, (4) determined whether there was a flaw in the cash flow spreadsheet that caused the variance and, if so, determined the impact this flaw had on all cohorts, and (5) reestimated subsequent years' subsidy amounts, as appropriate.

7. Determine whether the agency is appropriately using the latest version of the OMB

Credit Subsidy Model by contacting and obtaining a copy of the Credit Subsidy Model from the agency's OMB budget examiner. This version should be compared with the version used by the agency to calculate the credit subsidy by using the "file compare" feature of desktop operating software. Any differences that are identified through this comparison should be investigated and explained.

8. If applicable, determine whether waivers were obtained from OMB for years in which subsidy reestimates were not performed in accordance with OMB guidance.

9. Determine how management assures itself that the agency used the proper scale for the cash flow spreadsheets. Some program subsidy rates, particularly those for programs disbursing over several years, may be influenced slightly by the scale of the program. Therefore, management should determine whether an appropriate scale has been used so that rounding to three decimal places has no significant effect on the cash flow spreadsheet values and the subsidy rate.

10. Determine how management assures itself that the agency has appropriately prepared cash flows using a cohort basis or disbursement year basis. For example, when a program disburses over more than one year, the auditor should determine whether the agency used a disbursement year basis. If the agency used a cohort basis, the auditor should determine why the agency did not use a disbursement year basis and whether the use of cohort level cash flows has had a material effect on the subsidy calculation. If the effect is material, the auditor should recommend that the agency prepare cash flows on a disbursement year basis to eliminate the problem.

11. Determine whether agencies have controls over access to the OMB Credit Subsidy Model, e.g., confirmation of passwords, and determine whether these controls adequately protect the model from unauthorized use and corruption.

2. Control Activities

Control activities are the policies and procedures designed to ensure that management directives are carried out. Control activities have various objectives and are applied at various organizational and functional levels. Control activities can include physical controls, segregation of duties, performance reviews, and information processing. When assessing management's assignment of responsibility and delegation of authority for ensuring the efficient and effective implementation of credit reform, the auditor should consider doing the following.

1. Assess management's control methods for monitoring and following up on the agency's ability to prepare accurate subsidy estimates by reviewing, on a test basis for material programs, management's comparison of projected net cash flows with actual cash flows to determine whether over time projected cash flows are becoming more representative

of actual cash flows and whether reestimates are the result of controllable factors (technical cash flow assumptions) or uncontrollable factors (discount rate assumptions).

2. Verify that the cash flow assumptions that the agency used in the OMB Credit Subsidy Model were reviewed and approved by the appropriate agency management.

3. Determine how management assures itself of the reliability and logic flow in formulas and mathematical functions within agency initial cash flow worksheets.

4. Assess the internal controls used by management to ensure that changes made to cash flow spreadsheet formulas are appropriate. For example, if changes made to one cash flow spreadsheet need to be carried forward to other spreadsheets, determine whether this is done automatically or if each spreadsheet must be updated individually. Assess the risk of errors being introduced during this process.

5. Determine whether management has a systematic process in place to identify significant changes in economic or other assumptions that will affect subsidy rates of existing cohorts. Determine whether management has a systematic process in place to calculate the differences between actual and estimated cash flows and the possible effect of these differences on the future cash flows of existing cohorts. Determine whether this process assesses the materiality of these changes on the cash flow estimates and the subsidy expense and appropriately concludes whether reestimates are required under OMB guidance. In evaluating potential changes in cash flow assumptions, the process should assess the impact that various factors may have on the program (which also may affect subsidy rates), such as:

   - legislative program changes,
   - administrative program changes,
   - environmental changes,
   - operational changes, e.g., a reduction in employees because of budgetary constraints that would impact the servicing of loans,
   - war, and
   - international economic factors.

6. Determine how management assesses the impact of changes in laws or regulations on the reliability of estimates. For example, a legislative program change may include provisions about maturity or type of borrowers that are outside the scope of past agency experience or may include program changes that shift the composition of new lending toward more or less risky borrowers. Stratification of the portfolio by risk category may enable management to assess the effect of the changes on the estimates. If the agency's data bases do not permit such a stratification, the uncertainty associated with the estimates may increase.

7. Determine whether management has a systematic process in place to estimate the effect of the factors considered in number 6 above on the cash flows of new cohorts.

Once specific controls related to the above activities have been identified, additional tests should be designed to ensure that the agency's controls are operating as designed. The auditor should consider using dual purpose testing to combine the internal control testing with substantive testing as appropriate. Dual purpose testing is discussed in more detail in the section on substantive testing of subsidy estimates in this technical release.

3. Information and Communication

The quality of system-generated information affects management's ability to prepare reliable financial reports. Communication involves providing an understanding of individual roles and responsibilities pertaining to internal control over financial reporting. The auditor should obtain an understanding of (1) the classes of transactions in the agency's operations that are significant to credit reform accounting in accordance with Treasury case studies, (2) how those transactions are initiated, (3) the accounting records, supporting information, and specific accounts in the financial statements involved in the processing and reporting of the transactions, (4) the accounting process involved from the initiation of a transaction to its inclusion in the financial statements, and (5) the financial reporting process used to prepare the agency's financial statements, including significant accounting estimates and disclosures. When assessing controls over information and communication, the auditor should consider doing the following:

1. Identify and test the controls in place designed to ensure that appropriate personnel are made aware of any concerns that result from reviewing key cash flow assumptions and comparing estimated to actual cash flows as well as the actions taken to resolve the concerns and update the subsidy estimate as appropriate.

2. Determine whether internal controls are in place to ensure that the data supporting the cash flow identifiers used in the spreadsheets are appropriate and consistent with the description of the identifier contained in the applicable user's guide of the OMB Credit Subsidy Model. Effective internal controls are needed to ensure that disclosures concerning the amount of subsidy expense related to interest differential (direct loans), interest supplement (guaranteed loans), defaults (net of recoveries), fees, and other are reasonable. For example, the User's Guide to Version r.8 of the OMB Credit Subsidy Model with r.9 Supplement describes recoveries as the effect of losses recovered that resulted from disposition of collateral, actions by the borrower to restore the loan to

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[22]Cash flow identifiers are listed in the OMB Credit Subsidy Model User's Guide and include various elements the agency must consider when estimating net cash flows, such as disbursements, principal payments, interest payments, fees and other income, defaults, etc.

good standing or similar actions. The auditor should identify and test controls designed to ensure that the amount estimated for recoveries is based on reliable, complete information from the agency's past experience. The auditor should also identify and test controls designed to ensure that when compiling the information upon which the estimate is made, transactions have been properly classified as a recovery rather than a reduction in the amount of another cash identifier such as "defaults" or "losses other than default."

3. Determine whether controls are in place to ensure that all applicable credit program cash flows are addressed in the subsidy estimation process. For example, cash flows should be estimated for all transaction types that affect Standard General Ledger Account nos. 1399, Allowance for Subsidy, and 2180, Loan Guarantee Liability. Conversely, transactions in unrelated accounts should be excluded from the subsidy calculation. To test these controls, the auditor should consider reviewing the cash flow worksheet input and the program description to determine whether all applicable cash flow types have been included. In addition, the auditor should review the transaction types included in the Allowance for Subsidy and the Liabilities for Loan Guarantees accounts on a test basis to determine whether these transactions are appropriate.

4. Risk Assessment

The risk assessment process is an internal process used by the agency to (1) identify and analyze the relevant risks to achieving its objectives and (2) develop a plan to mitigate the identified risk. The auditor should obtain sufficient knowledge of the agency's risk assessment process to understand how management identifies, evaluates, and mitigates risks relevant to developing reliable credit subsidy estimates. In evaluating the risk assessment process, the auditor should determine if management developed a strategic plan with goals and objectives for ultimately improving the reliability of estimates. The auditor should determine whether this plan addresses (1) clearly defining the data requirements, (2) developing an effective information store and modeling methods as described in issue paper 96-CR-7 Model Credit Program Methods and Documentation for Estimating Subsidy Rates and the Model Information Store, (3) improving the methods of estimating cash flows, and (4) step-by-step resource allocations and target completion dates to meet the goals and objectives of the strategic plan. Also the auditor should assess management's progress at meeting the plan's goals and the targeted completion dates.

5. Monitoring

Management should monitor controls to determine whether they are operating as intended

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A proposal has been developed to revise the financial statement disclosure requirement s for credit subsidy component information. This technical release will be revised accordingly once the proposal has been finalized.

and that they are modified as appropriate for changes in conditions. Monitoring is a process that assesses the quality of internal control performance over time. OMB Circular no. A-123, Management Accountability and Control, is issued under the authority of the Federal Managers' Financial Integrity Act (FMFIA) of 1982 and provides guidance to federal managers on improving the accountability and effectiveness of federal programs and operations by establishing, assessing, correcting, and reporting on management controls. During federal financial statement audits, the auditor is required to assess the agency's compliance with the FMFIA. The auditor should obtain sufficient knowledge of the major types of activities the entity uses to monitor internal controls over financial reporting, including how those activities are used to initiate corrective actions. When assessing control risk, the auditor should be cognizant of any material weaknesses reported in the agency's FMFIA report that relate to the efficient and effective implementation of credit reform.

C. Substantive Testing of Subsidy Estimates

Agencies are required by SFFAS no. 2 to account for subsidies at the cohort level in their accounting systems. This information is then aggregated for inclusion in the financial statements. As previously noted, footnote information related to credit programs is typically reported at the fund or program level and the total subsidy expense for the year is divided among three categories: the current year's direct loans or loan guarantees, modifications, and reestimates. The subsidy expense for the current year's direct loans or loan guarantees is segregated into four categories consisting of interest differential or supplement, defaults, fees, and other. The auditor needs to gain assurance about these cost categories at the aggregated fund/program level; however, it is difficult for the auditor to apply adequate procedures for summary amounts which represent numerous cohorts. It would be difficult to explain variations in aggregated amounts without addressing the more detailed cohort level. Determination of what level to disaggregate subsidy information for the purposes of an audit will vary for each agency and will be contingent on current practice and available information.

1. General Approach to Substantive Testing

The following four steps provide a general approach for performing substantive testing. Detailed guidance on implementing these four general steps follow. The nature, timing, and extent of substantive tests will be significantly influenced by the auditor's assessment of the internal control environment. **This section is written under the premise that the agency has established effective internal controls.** See section 2 below for a discussion of the impact of ineffective controls on the nature, timing, and extent of substantive testing as well as the impact on the audit opinion.

1. Select a representative sample of cohorts for detailed testing, for those material programs selected for internal control testing.

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[24]Professional standards stated in AU Section 350.24 that "sample items should be selected in

2. Test sampled cohort estimates to determine whether the credit reform process is working as defined and whether the account balance is reasonably stated.

3. Perform analytical review procedures to gain assurance that the estimates are reasonable for lines of business, funds, programs, or cohorts not selected for detail testing.

4. Conclude on audit differences identified during the testwork and determine the financial statement impact.

2. Impact of Ineffective Internal Controls on Substantive Testing

The auditor's assessment and conclusions regarding the effectiveness of the agency's internal control structure, including computer security and the effectiveness of EDP controls, will significantly impact the level of substantive testing. If the agency's internal control structure is not effective (i.e., does not adequately reduce the risk that a material misstatement related to credit reform in the financial statements would be detected and corrected), the auditor will need to design substantive tests to gain assurance on the account balance and propose audit adjustments as necessary.

For example, if there is no system in place to trigger reestimates, the auditor will need to review management's comparison of actual cash flows for material programs to projected cash flows to search for and identify material variances. In addition, the auditor will need to determine whether the agency identified other factors that may materially affect future cash flows, e.g., economic downturn, program changes, or drought, and may require a reestimate. If the budgeted to actual cash flow comparison was not done by the agency, the auditor should consider performing this analysis based on resource availability. Based on the auditor's analysis of the identified variances and other changes that may affect future cash flows, the auditor should determine whether a reestimate is necessary and urge the agency to calculate the reestimate. Once the reestimate is made, the auditor is then able to assess the impact of the reestimate on the financial statements.

If in the auditor's opinion (1) the internal control weaknesses are so significant that the subsidy expense is likely to be materially misstated, (2) resource constraints make it unreasonable for the auditor to conduct the level of substantive testing necessary to determine the possible audit adjustments, or (3) resource constraints at the agency make it unreasonable to calculate all the necessary material reestimates and include them in the financial statements, the auditor would likely be required to modify the audit opinion. For

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such a way that the sample can be expected to be representative of the population. Therefore, all items in the population should have an opportunity to be selected."

example, the monitoring process to determine whether reestimates are necessary is a key internal control. Without effective monitoring, the agency may not have reasonable assurance that material reestimates will be made timely and the auditor would need to expand the level of substantive testing. When an agency does not (1) reestimate credit subsidies for the most recently completed fiscal year and include the reestimate in the current year's financial statements or (2) provide assurance that there is no material financial statement impact (as specified in section III. C of this technical release), the auditor should consider modifing the audit opinion.

When assessing the financial statement impact of subsequent events related to credit subsidies, the auditor should follow the guidance in AU Section 342.13 for events occurring after the reestimate date but before the end of field work. In addition, auditors should consider AU Sections 508.19 and .29 - .32 when assessing the effect of uncertainties on the agency's financial statements and the auditor's opinion.

3. Selecting the Sample of Cohorts

The procedures for selecting a sample of cohorts depend upon the type of information to be gleaned from the sample and the desired precision of sample estimates. The sampled cohort is tested to determine whether the credit reform process is working as defined and more specifically, whether the related balance sheet and statement of net cost line items are reasonably stated. In order to gain audit efficiencies, the auditor should consider utilizing dual purpose testing for a representative sample of cohorts selected from material credit programs. In this way, the auditor will be able to gain assurance from the same sample that both the internal control structure is effective and that the account balance is reasonably stated in relation to the financial statements taken as a whole. When more than one program utilizes the same system of internal controls, the auditor should only test the system once to gain assurance on all related programs and their cohorts. To utilize representative sampling, the auditor must select sample items in such a way that each item in the population has an opportunity to be selected and the estimators are appropriate for the selection methods. In this way, the sample and the resulting estimate or projection are expected to be representative of the population from which the sample was selected. In addition, sufficient sample sizes are necessary in order for the auditor to arrive at meaningful conclusions.

The auditor may wish to stratify the population of cohorts into homogeneous groups prior to selecting the sample to improve sampling efficiency. For example, the auditor may stratify the cohort population into the following three significant groups: (1) material cohorts of such a magnitude that the auditor will test them all, (2) material cohorts that the auditor will sample for testing, and (3) immaterial cohorts that will be subjected to analytical review

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[25]Dual purpose testing often improves audit efficiency by performing multiple audit procedures on a single sample, e.g., internal control attribute and substantive testing.

procedures. For some agencies, the small number of cohorts may prohibit using this sampling approach. In these instances, the auditor should focus on selecting a representative sample in a nonstatistical manner, i.e., using auditor's judgement to select material cohorts for testing to obtain sufficient coverage of the balance being audited or doing a 100 percent sample.

Alternatively, when the agency's control environment is strong and inherent risk is low, the auditor may test cohorts on a rotating basis. In determining whether rotational testing is appropriate, the auditor should consider (1) the results of prior audit experience, (2) the length of time since the cohort was tested, (3) the materiality of the cohort in terms of the relative effect of the cohort on total program expenditures or the size of the program in absolute dollars, and (4) the auditor's assessment of inherent and control risk. The auditor may wish to score these factors in determining the cohort's relative risk. Based on the cohort's score, the auditor may establish a rotation matrix for substantive testing. For example, all cohorts above a predetermined score would be considered high risk and selected for substantive testing while other cohorts below this score could be tested on a rotating basis.

4. Testing Sampled Cohorts

Professional standards call for the auditor to "analyze historical data used in developing the assumptions to assess whether the data are comparable and consistent with data of the period under audit, and consider whether such data are sufficiently reliable for the purpose." In the planning phase, the auditor identified the key credit subsidy assumptions as those which were either sensitive to variations or varied significantly. Based on this work, and the results of the internal control analyses, the auditor should be able to focus on the key assumptions. However, these key assumptions may be tested in conjunction with the audit of other financial statement line items. For example, the default rate assumption for guaranteed loans can be tested as part of the audit of claim payments, recovery rate assumptions can be tested during the audit of foreclosed property, fees can be audited in conjunction with insurance premium or other cash receipts, and prepayments can be audited during the audit of insurance in force. In these cases, the auditor must carefully plan the audit samples for these areas in order to include information that will be applicable to the credit subsidy audit and gather sufficient evidence for the auditor to determine the reasonableness of the credit subsidy. For example, when auditing credit subsidy default, prepayment, and recovery assumptions, it is important to determine for which cohort the claim payment was made.

The following are examples of the types of tests the auditor can perform on a representative sample of cohorts selected for dual purpose testing:

1. Collect projected cash flow worksheets used for budget execution and the most recent

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[26]Codification of Statements on Auditing Standards, AU Section 342, Auditing Accounting Estimates.

reestimates for each cohort selected for testing to determine whether the program assumptions are utilized at the cohort level. Trace and compare key cash flow assumptions to the agency's supporting data, including reports on defaults, prepayments, recoveries, etc.

2. Verify the reliability of the data used in developing the assumptions and ensure that key assumptions are sufficiently reliable by

   - comparing the reports to similar reports tested in related audit areas to assess consistency, and
   - tracing summary reports to historical supporting documentation, on a test basis, to determine whether the reports are complete and accurate.

3. Determine whether management used reasonable and systematic methods to project key cash flow assumptions by reviewing, assessing, and recalculating, on a test basis, key portions of the cash flow worksheets.

4. Based on the results of EDP-related control tests, the auditor should consider obtaining an appropriate, unmodified version of the OMB Credit Subsidy Model, downloading the agency's cash flows into this version, and comparing the output to the agency's subsidy calculation. In performing these procedures, it is important for the auditor to use the same cash flows as those used to calculate the subsidy rate. Thus, the auditor should verify that the file name, range name, and the date and time the spreadsheet was last changed matches the information on the model output. If differences are identified through this comparison, the auditor should consider recalculating the subsidy rate using the agency's data and an appropriate copy of the model provided by the OMB budget examiner. Differences between the auditor's recalculated rate and the agency's rate should be investigated and explained.

5. The auditor should review the OMB Credit Subsidy Model output to determine whether any warning messages are listed and, if so, to determine why the situation causing the warning message was not resolved and whether not eliminating the error could have any impact on the subsidy rate calculation. Also, if applicable, auditors should determine whether the suppression of any error messages was appropriate by checking the agency's cash flow spreadsheet to determine whether the "suppress warnings" command was used and assess the impact these suppressed error messages could have on the cash flows.

6. The auditor should determine whether the OMB Credit Subsidy Model options that were selected properly reflect specific characteristics of the applicable credit program. For example, the OMB Credit Subsidy Model options for the timing of principal and interest payments for direct loan programs and the percent of loans guaranteed for guarantee programs should agree with the program's credit terms.

7. Verify that reestimates were performed under the conditions specified in section III.C. of this technical release. Determine whether reestimates were performed in addition to those required under section III.C. of this technical release. For example, reestimates required for budgetary purposes may not be material to the financial statements.

8. Determine that these reestimates were completed, included in the financial statements, and submitted to OMB.

9. Determine whether the reestimation process included adjustments to subsequent years' estimates of cash flows for this cohort.

10. Determine why reestimates were not calculated and included in the financial statements, if applicable. When reestimates are not prepared for the most recently completed fiscal year, the agency must document the reason for forgoing the reestimate otherwise required in Circular A-11 and SFFAS no. 2 and provide the necessary supporting documentation to OMB and the auditor. The documentation should address the requirements in section III.C. of this technical release.

11. Trace interest rates to approved OMB/Treasury rates to ensure that interest expense and income are calculated in accordance with OMB Circular A-34.

12. Verify that reestimates submitted by the budget office and approved by OMB have been recorded in the accounting records.

13. Determine whether modifications occurred as defined in SFFAS no. 2 and OMB Circulars A-11 and A-34 and whether the modification cost was estimated.

14. Verify whether the cash flows and discount rates used to calculate the premodification and postmodification values of the direct loans (or values of the loan guarantee liability) were determined appropriately.

15. Verify whether the modification cost was submitted to OMB, recorded in the accounting records, and included in the financial statements.

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[27]OMB has established a four-step process, outlined in Circular A-11, for agencies to calculate technical/default reestimates for the budget less often than every fiscal year -- subject to OMB approval. However, this guidance does not allow agencies to omit material technical/default reestimates from the current year financial statements or to postpone including material technical/default reestimates in the financial statements until a subsequent year. Conversely, the OMB process may require agencies to make technical/default reestimates for the budget that are not material to the financial statements.

5. Analytical Review Procedures

Analytical review procedures can be performed on lines of business, funds, programs, or cohorts not selected for detailed testing. Generally, these procedures consist of comparing recorded balances of subsidy expense, fund balance with Treasury, debt owed to Treasury, credit program receivables and related foreclosed property, and the liabilities for loan guarantees, with the auditor's expectations. The basic premise of analytical review procedures is that plausible relationships among data may be expected to continue unless conditions are known that would change the relationship. Based on the results of the analytical review procedures outlined below, some programs may be selected for detail substantive testing. In applying analytical review procedures, the auditor should consider the following procedures.

1. Based on the information gathered during the internal control phase of the audit, including the auditor's understanding of the estimation process and economic events affecting the period under review, develop an expectation or estimate of what the recorded amount should be. For example, the auditor could compute an estimate of the subsidy expense by using averages as an overall test of reasonableness, i.e., average loans outstanding, average interest rate, average default rate, and average fees. Compare the results of the auditor's estimate to the actual recorded balance to identify significant differences that require investigation. When making estimates of an account balance, the auditor should assess the reliability of the data used and the impact faulty data could have on the auditor's expectation of the subsidy amount.

2. Compare the subsidy amounts for lines of business, funds, programs, or cohorts not selected for sampling for three or more years to identify trends and significant fluctuations in the subsidy rates.

3. Obtain explanations for these fluctuations from management to determine whether the fluctuations are reasonable. Scan cash flow worksheets/reports to search for unusual items and investigate significant fluctuations.

4. Corroborate management's explanations as necessary. Corroboration generally consists of reviewing related supporting documentation or obtaining explanations from accounting or budget personnel or from the appropriate program department. These explanations should be quantified and address the direction and magnitude of the event causing the fluctuation.

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[28]Although scanning is not usually considered an analytical procedure on its own, this technique could be used to investigate unusual fluctuations in subsidy amounts or corroborate management's explanation of variances between projected cash flows and actual cash flows.

5. If the explanation and/or corroborating evidence does not adequately explain the fluctuation, the auditor should consider

   - increasing the precision in the auditor's expectations,
   - increasing the extent of detailed testing for the cohorts discussed above and not relying on the analytical procedures, or
   - treating the difference as a misstatement.

6. Review and recalculate selected portions of the agency's trend analysis of the credit subsidy expense components to determine whether the agency identified and explained unusual or significant fluctuations in interest, defaults, fees, and other. If the agency has not done the credit subsidy component trend analysis, the auditor should consider performing this analysis. Once unusual or significant fluctuations have been identified, the auditor should obtain and corroborate management's explanation.

6. Compliance with Laws and Regulations

By using the audit approach described in this technical release, the auditor will test compliance with the Credit Reform Act of 1990. Thus, no separate audit procedures are necessary to test compliance with this act.

7. Concluding on the Reasonableness of Estimates

Statement on Auditing Standard no. 57 Auditing Accounting Estimates, AU §342, states that the auditor evaluates the reasonableness of accounting estimates in relationship to the financial statements taken as a whole. It goes on to state:

> "Since no one accounting estimate can be considered accurate with certainty, the auditor recognizes that a difference between an estimated amount best supported by the audit evidence and the estimated amount included in the financial statements may be reasonable, and such difference would not be considered to be a likely misstatement. However, if the auditor believes the estimated amount included in the financial statements is unreasonable, he should treat the difference between that estimate and the closest reasonable estimate as a likely misstatement and aggregate it with other likely misstatements. The auditor should also consider whether the difference between estimates best supported by the audit evidence and the estimates included in the financial statement, which are individually reasonable, indicate a possible bias on the part of the entity's management. For example, if each accounting estimate included in the financial statements was individually reasonable, but the effect of the difference between each estimate best supported by the audit evidence was to increase income, the auditor should reconsider the estimates taken as a whole."

Uncertainties, among other qualitative aspects of information in financial reports, are discussed in Statement of Federal Financial Accounting Concepts (SFFAC) no. 1, Objectives of Federal Financial Reporting. According to SFFAC no. 1, "Reliability [of financial information] does not imply precision or certainty, but reliability is affected by the degree of estimation in the measurement process and by uncertainties inherent in what is being measured." Thus, an amount reported in the financial statements may be "fairly stated," but still imprecise. In addition, SFFAC no. 1 states that "Financial reporting may need to include narrative explanations about underlying assumptions and uncertainties inherent in this process. Under certain circumstances, a properly explained estimate provides more meaningful information than no estimate at all." In other words, imprecision of accounting estimates can be overcome, to some extent, by appropriate financial statement disclosures. In determining whether (1) the credit program receivables and related foreclosed property and the liabilities for loan guarantees line items on the balance sheet, (2) the subsidy expense included in the statement of net costs, and (3) related footnote disclosures regarding credit reform are reasonably stated, the auditor must evaluate and carefully consider all of the audit evidence gathered, including the results of the internal control testing, EDP reviews, detailed substantive testing, analytical review procedures, as well as the above authoritative guidance.

Appendix I

Acceptable Sources of Documentation for Subsidy Estimates and Reestimates

Documentation must be provided to support the assumptions used by the agency in the subsidy calculations. This documentation will not only facilitate the agency's review of the assumptions, a key internal control, it will also facilitate the auditor's review. Documentation should be complete and stand on its own, i.e., an independent person could perform the same steps and replicate the same results with little or no outside explanation or assistance. If the documentation were from a source that would normally be destroyed, then copies should be maintained in the file for the purposes of reconstructing the estimate.

A. Management should ensure that the following documentation is available for initial subsidy estimates, reestimates, and modifications of existing credit programs:

1. procedures for calculating the subsidy estimate,

2. review and approval process of the subsidy estimate, including the sign-off procedure within the agency,

3. calculation of the recorded subsidy estimates, including the underlying assumptions and cash flow model,

4. historical supporting documents used in the underlying assumptions,

5. documentation of relevant supporting actual cash and economic experience (including the date and source of reports, and how recently the data were updated), which may include:

    - cash reports on historical performance,
    - historical data and trends, citing sources of information and relevant time frame,
    - sensitivity analysis or other analysis that identifies the most critical factors,
    - reports from the accounting or management systems showing trends
    - actuarial studies,
    - experience of other agencies with similar programs,
    - emergencies (acts of God) or legislated changes (acts of Congress), such as changes in the program terms, maximum allowable loan amount, total program size, or characteristics of the credit program's borrower population, and
    - economic and/or industry data and subsequent analyses, including industry

studies, journal articles, trade papers, and third party studies.

6. documentation of relevant program design factors, which may include:

- program definition including fees, grace period, term to maturity, borrower interest rates, legal definitions, and enabling or enacted legislation,
- legislation or regulations changing the terms, maximum allowable loan amount, total program size, or characteristics of the credit program's borrower population,
- program eligibility requirements,
- lender agreements detailing the terms of the guarantee, and
- borrower contracts outlining the terms and conditions of the loan or guarantee.

B. Management should ensure that the following documentation is available for new programs or changes to existing programs that may not have historical supporting documentation for cash flow assumptions and spreadsheets. In the absence of valid and relevant historical experience as the support for cash flow assumptions, the agency should document the basis for cash flow assumptions. Typical support will include:

- Relevant experiences from other agencies, including documentation of why another agency's experience is relevant, as well as similarities and differences (particularly possible biases) between the other agency's experience and the changes to existing programs or new programs,

- Extrapolation from subsets of prior program activity, e.g., while prior loans were not targeted for single heads of households, it may be possible to identify prior loans that were made to single heads of households and the experience of such loans in prior records.

- Assumptions used by underwriters for the purposes of determining eligibility, loan approval, or credit scoring.

- Private sector proxies for risk, such as bond ratings to assess default risk, may be used when there is no relevant federal government experience. For example, an agency may consider using bond ratings for a state agency that finances similar loan programs, such as education, farm, or housing, with bonds.

- Extrapolations from private sector lending experience including documentation

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[29]For example, past data may document the historical relationship between interest rates, whereas an independent study may demonstrate how trends in past data are expected to change in the future.

explaining why this experience is applicable to the agency's credit program and possible biases for which an adjustment is needed, e.g., different borrower characteristics.

- Expert opinion may also be used as an interim measure to support cash flow assumptions. In these cases, the agency must document the expert's qualifications, such as professional or academic certification or length of experience, as well as the basis of the stated opinion. In addition, the following documents should be maintained in support of the expert's opinion:

  - memos from conversations with outside experts,
  - reports and studies on similar industry conditions,
  - minutes from internal meetings describing the basis for any assumptions or changes in assumptions,
  - previous studies conducted by the expert, including industry studies, journal articles, and third party studies.

Appendix II
Technical Glossary

Assumptions - basic beliefs about the future operating and functional characteristics of the loan or group of loans or loan guarantees. Types of assumptions include:

> cash flow assumptions - all known and/or forecasted information about the characteristics and performance of a loan or group of loans or loan guarantees. Examples include estimates of loan maturity, borrower interest rate, default/delinquency rate, timing of defaults, overall impact of changes in economic factors, etc.
>
> model assumptions - determinations of how cash flow assumptions are applied through the life of the cohort. For example, determining whether the entire assumed amount of defaults should be applied in 1 year or whether a constant or variable proportion of the assumption value should be allocated to each year. The allocation of cash flows over time is the selected model form and is just as influential as the cash flow assumption.

Cash flow stream - the agency's projection of the dollar amount for the scheduled cash flows and deviations from scheduled cash flow items for each year over the life of the cohort.

Cash flows - Estimates or payments to or from the Government over the life of a loan or group of loans or loan guarantees. For direct loans, these may include: loan disbursements, repayments of principle, payments of interest, and any other payments such as defaults, prepayments, fees, penalties, and other recoveries. For loan guarantees, these may include: payments by the government to cover defaults and delinquencies, interest subsidies, payments to the government, such as origination and other fees, penalties and recoveries, and any other payments.

Financing Account - the non-budget account or accounts associated with each credit program account that holds balances, receives the subsidy cost payment from the credit program account, and includes all other cash flows to and from the Government resulting from post-1991 direct loans or loan guarantees. Each program account is associated with one or two financing accounts, depending whether the account makes both direct loans and loan guarantees (separate financing accounts are required for direct loans and loan guarantees).

Inputs - cash flow data elements used to develop spreadsheet calculations.

Internal controls - are a process--effected by an agency's management and other personnel--to provide reasonable assurance regarding the achievement of reliable financial reporting, effective and efficient operations, and compliance with applicable laws and regulations. Internal controls consist of the control environment, control activities, information and communication, risk assessment, and monitoring.

Key assumptions - assumptions that have been established, through sensitivity analysis or other means, to be the elements that have a large impact on estimates, and thus are the most important factors in determining the cost of a loan or group of loans or loan guarantees.

Liquidating Account - the budget account that includes all cash flows to and from the Government resulting from pre-1992 direct loans or loan guarantees.

Model - a representation in mathematical symbols (or at least graphically) that depicts a formulated theory about the relationship among measurements of some phenomenon that varies. A model includes both cash flow assumptions and model assumptions.

Modeling - the process of developing and selecting an appropriate set of cash flows and model which generally have two aspects: (1) a choice of a general mathematical function (equation) describing a basic shape or process and (2) a choice of the model parameters that distinguish one specific shape from the general class of functional forms. The mathematical functions may take many forms. Commonly known examples of models are simple regression ($y = ax + b$), multiple regression ($y = ax + by + z$), and time series. Many other simple or more complex model forms related to cash flow modeling reform are possible.

Model parameters - the values that identify a unique model from the general form. For example, $y = 2x + 3$ has parameters $a = 2$ and $b = 3$ for the simple regression model class. Note that "model parameter" is sometimes used in credit reform documents in lieu of the more appropriate term "input variable in the spreadsheet."

Negative Subsidy Account - the budget account for the receipt and/or expenditure of amounts paid from the financing account when there is a negative subsidy for the original estimate or a downward reestimate (not necessarily used for mandatory programs).

OMB Credit Subsidy Model - computer software developed by OMB for discounting cash flows in estimating credit subsidies. It uses agency cash flow inputs to compute the net present value at the point of disbursement and the subsidy rate associated with those cash flows.

Program Account - the budget account into which an appropriation to cover the subsidy cost of a direct loan or loan guarantee program is made and from which such cost is disbursed to the financing account.

Spreadsheets - computer code, often a collection of programs, used to make cash flow calculations according to the proposed models and assumptions. Spreadsheets are not models although the term "spreadsheet model" is sometimes used.

Technicals - cash flow information input used to make spreadsheet calculations (spreadsheet elements needing completion).

Appendix III
Summary of Reestimate Requirements

	Budget	Financial Statement
Interest Rate Reestimate	Frequency: At least one time when the cohort is 90% disbursed	Frequency: Whenever the change in the interest rate materially affects the financial statements or, if no material change occurs prior to the cohort being 90% disbursed, at least one time when the cohort is 90% disbursed.
	Timing: At the end of the fiscal year	Timing: At the end of the fiscal year
Technical / Default Reestimate	Frequency: Annually unless a different plan is approved by OMB - regardless of financial statement materiality	Frequency: Any year when material. Also, agencies must disclose significant subsequent events after the reestimate date in the financial statement footnotes.
	Timing: At the end of the fiscal year unless otherwise approved by OMB.	Timing: At the end of the fiscal year or, if approved by OMB, a 12 month period ending not earlier than June 30 of the reporting year. Also, agencies must disclose if the reestimate was calculated at a time other than the end of the fiscal year.